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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,176	12/20/2004	Seung-Jae Moon	20010-07USA	5249

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EXAMINER	
BOYKIN, TERRESSA M	
ART UNIT	**PAPER NUMBER**
1711	

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07/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,176	MOON ET AL.	
	Examiner	Art Unit	
	Terressa M. Boykin	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 5-22-7 have been fully considered but they are not persuasive. Applicants claims are drawn to a catalyst preparation that *may be used* to form a polycarbonate. The catalyst itself and the preparation thereof are the primary consideration of the Examiner and not the intended further use of the catalyst. Consequently, the claims remain anticipated by the reference. The Examiner canto allow the claims as currently written in that the claims are consider to be extremely broad and consist of no process step, other than mixing, which would render the claims novel (or unobvious)..

As noted previously, applicants' claim 1 still remains so broadly set forth that the claim continues to be interpreted by the Examiner as anticipated by the references while remaining within the scope of the specification. It is again noted, albeit, an intended use for the catalyst, that ***a polycarbonate is in fact a polyester carbonate*** and thus a polyester in general. Applicants have neither in the specification nor in the claims shown or stated that a particularly structured polycarbonate is prepared.
Without such clarity, the art of record remains within the scope of the present claims and the applicant's arguments although understood and appreciated are moot on those basis.

**The applicants are encouraged to contact tot the Examiner for a telephone interview in order to expedite the case.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

. **Claims 1- 7, 9- 11 are rejected under 35 U.S.C. 102(b) as being anticipated by USP 5605981 see abstract, cols. 1-6 and claim 2.**

USP 5605981 discloses a process for the preparation of a decomposable lactic copolymer polyester which exhibits a sufficiently high molecular weight, heat resistance and thermal stability and further exhibits a rigidity, flexibility and transparency depending on the purpose. The process for the preparation of a high molecular lactic copolymer polyester includes reacting a polyester terminated by hydroxyl group at both ends (B1) with a polyvalent isocyanate (E) having 2 or more functionalities to obtain a polyester (B4) having a weight-average molecular weight of from 10,000 to 300,000, and then allowing said polyester (B4) and lactide (A) to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D). A process is also provided which includes allowing a lactide (A) and a polyester terminated by hydroxyl group at both ends (B1) to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D) to prepare a polyester having a weight-average molecular weight of from 10,000 to 300,000, and then reacting said polyester with a polyvalent isocyanate having 3 or more functionalities.

The polymerization reaction is preferably effected in the presence of a ring opening polymerization catalyst (D). Examples of the ring opening polymerization catalyst (D)

employable in the present invention include cyclic ester ring opening polymerization catalysts, metals such as tin, zinc, lead, titanium, bismuth, zirconium and germanium and derivatives thereof which are known as ester exchange catalysts, etc. These metal derivatives can be used as catalysts of the present invention. Particularly preferred among these metal derivatives are organic metallic compounds, metallic carbonates, metallic oxides, metallic halides, etc. Specific examples of these metal derivatives include tin octanoate, tin chloride, zinc chloride, zinc acetate, lead oxide, lead carbonate, titanium chloride, alkoxytitanium, germanium oxide, and zirconium oxide.

In the case where the polyvalent carboxylic acid having 3 or more functionalities and/or acid anhydride thereof (C) is reacted with the polyester terminated by hydroxyl group at both ends (B1) or the polyvalent carboxylic acid having 3 or more functionalities and/or acid anhydride thereof (C), the dicarboxylic acid and the diol are allowed to undergo dehydration reaction and deglycolation reaction to prepare a polyester, a catalyst is preferably used.

As the catalyst employable in the present invention there may be used any catalyst generally known as an esterification catalyst. Examples of such a catalyst include organic or inorganic compounds of at least one metal selected from the group consisting of tin, zinc, lead, titanium, antimony, cerium, germanium, cobalt, manganese, iron, aluminum, magnesium, calcium and strontium.

In the case where the lactide (A) and the polyester terminated by hydroxyl group at both ends (B1) are allowed to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D) to prepare a high molecular lactic copolymer polyester having a weight-average molecular weight of from 10,000 to 300,000 which is then reacted with the polyvalent carboxylic acid having 3 or more functionalities and/or acid anhydride thereof (C), the mixture of the lactide (A) and the polyester (B1) is heated and melted or stirred in the presence of a solvent, followed by the addition of the

ring opening polymerization catalyst (D).

In the case where the lactide (A) and the polyester terminated by hydroxyl group at both ends (B1) are allowed to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D) to prepare a high molecular lactic copolymer polyester having a weight-average molecular weight of from 10,000 to 300,000 which is then reacted with the polyvalent isocyanate having 3 or more functionalities (F), the mixture of the lactide (A) and the polyester (B1) is heated and melted or stirred in the presence of a solvent, followed by the addition of the ring opening polymerization c catalyst (D).

Further, a metallic soap such as *zinc* stearate, magnesium stearate and calcium stearate, a lubricant such as mineral oil, liquid paraffin and ethylenebisstearamide, a *nonionic surface active agent* such as glycerinaliphatic ester and sucrose aliphate, an ionic surface active agent such as alkylsulfonic acid salt, a coloring agent such as titanium oxide and carbon black, etc. may be added to the material.

As stated above, applicants' claim 1 remains so broadly set forth that the claim is interpreted by the Examiner to be anticipated by the reference while remaining within the scope of the specification. Note that the claim is directed to a catalyst preparation which may be used to make a polymer including a polycarbonate as claimed. Since the claim actually directed to making a catalyst its intended use is inconsequential and since it would thus be considered auxiliary intended use for the catalysts. Note importantly that *a* reference's polyester catalyst. Applicants have neither in the specification nor in the claims shown or stated that a particularly structured polycarbonate is prepared.

The reference discloses a method as claimed by applicants. In view of the

above, there appears to be no significant difference between the reference(s) and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1- 7,9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 5605981 see abstract, cols. 1-6 and claim 2 further in view of Li-Chen et al. pages 253-260 as noted previously.

USP 5605981 discloses a process for the preparation of a decomposable lactic copolymer polyester which exhibits a sufficiently high molecular weight, heat resistance and thermal stability and further exhibits a rigidity, flexibility and transparency depending on the purpose. The process for the preparation of a high molecular lactic copolymer polyester includes reacting a polyester terminated by hydroxyl group at both ends (B1) with a polyvalent isocyanate (E) having 2 or more functionalities to obtain a polyester (B4) having a weight-average molecular weight of from 10,000 to 300,000, and then allowing said polyester (B4) and lactide (A) to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D). A process is also provided which includes allowing a lactide (A) and a polyester terminated by hydroxyl group at

both ends (B1) to undergo ring opening copolymerization in the presence of a ring opening polymerization catalyst (D) to prepare a polyester having a weight-average molecular weight of from 10,000 to 300,000, and then reacting said polyester with a polyvalent isocyanate having 3 or more functionalities.

The polymerization reaction is preferably effected in the presence of a ring opening polymerization catalyst (D). Examples of the ring opening polymerization catalyst (D) employable in the present invention include cyclic ester ring opening polymerization catalysts, metals such as tin, zinc, lead, titanium, bismuth, zirconium and germanium and derivatives thereof which are known as ester exchange catalysts, etc. These metal derivatives can be used as catalysts of the present invention. Particularly preferred among these metal derivatives are organic metallic compounds, metallic carbonates, metallic oxides, metallic halides, etc. Specific examples of these metal derivatives include tin octanoate, tin chloride, zinc chloride, zinc acetate, lead oxide, lead carbonate, titanium chloride, alkoxytitanium, germanium oxide, and zirconium oxide.

In the case where the polyvalent carboxylic acid having 3 or more functionalities and/or acid anhydride thereof (C) is reacted with the polyester terminated by hydroxyl group at both ends (B1) or the polyvalent carboxylic acid having 3 or more functionalities and/or acid anhydride thereof (C), the dicarboxylic acid and the diol are allowed to undergo dehydration reaction and deglycolation reaction to prepare a polyester, a catalyst is preferably used.

As the catalyst employable in the present invention there may be used any catalyst generally known as an esterification catalyst. Examples of such a catalyst include organic or inorganic compounds of at least one metal selected from the group consisting of tin, *zinc*, lead, titanium, antimony, cerium, germanium, cobalt, manganese, iron, aluminum, magnesium, calcium and strontium.

Further, a metallic soap such as *zinc* stearate, magnesium stearate and calcium

stearate, a lubricant such as mineral oil, liquid paraffin and ethylenebisstearamide, a *nonionic surface active agent* such as glycerinaliphatic ester and sucrose aliphate, an ionic surface active agent such as alkylsulfonic acid salt, a coloring agent such as titanium oxide and carbon black, etc. may be added to the material.

The reference discloses a catalyst which is prepared for a polyester and not specifically for a polycarbonate as claimed. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to prepare the catalysts for a polymer including a polycarbonate as claimed since the claim is directed to making a catalyst that may be further used to prepare polymers including polyesters and more specifically polycarbonates which would be considered an intended use fro the catalysts. Further, as noted previously, ***a polycarbonate is in fact a polyester carbonate*** and thus a polyester in general. Applicants have neither in the specification nor in the claims shown or stated that a particularly structured polycarbonate is prepared. Without such clarity or unexpected results, the art of record remains within the scope of the present claims.

Claims 9 and 10 are directed to organic aliphatic or aromatic dicarboxylic acid specifically with the zinc moieties as claimed. It is noted, however, that the reference on the other hand discloses that the zinc precursor may be zinc stearate. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the teaching of Li-Chen et al. in that the USP reference for the purpose of improving the characteristic of the resulting moiety made therefrom.

Consequently, the claimed invention cannot be deemed as unobvious and accordingly is unpatentable.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial sources. Applicants may be referred to the Electronic Business Center (EBC) at http://www.uspto.gov/ebc/index.html or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is **(571-272-1700).**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb

Examiner Terressa Boykin
Primary Examiner

Art Unit 1711